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Examining Teachers' Computer Literacy and Utilization of ICTs in Teaching and Learning at Primary School Level

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ABSTRACT Teaching and learning in the 21st century should ensure that teachers embrace and utilize the latest Information and Communication Technologies (ICTs) to enhance students' learning. Underpinned by the diffusion of innovations theory, the study sought to establish teachers' levels of computer literacy and utilization of ICTs in teaching and learning. Located in the pragmatist paradigm, the mixed methods research adopted a concurrent triangulation design. A convenient sample of seventy-one primary school teachers participated in the study and an open-ended questionnaire was employed to collect data. Quantitative data was analyzed statistically and qualitative data was analyzed for content. The study found that ICTs were not fully utilized in teaching and learning owing to a multiplicity of reasons. The study concludes that in a 21st century environment awash with technological advancements, some schools were far from enhancing teaching and learning by integrating ICTs. Recommendations were made.

INTRODUCTION

Information and Communication Technologies (ICTs) in Education

The world is undergoing rapid changes in the fields of information communication and technology (ICT) and the role of the 21st century teacher has had to adapt accordingly to fit and exist within the said changes in the classroom. Osuji (2010) argues that almost all the areas of human life today require knowledge of the computer. It is therefore mandatory for the modern day teacher to be highly computer literate in order to be able to assist learners to fit well into the modern society. Get Into Teaching (2016) reveals that computing is becoming vital in the education of children from about five years of age, thus, educators should be abreast with the ICT developments to ensure learners' needs are catered for from a tender age.

According to Women and Information Technology (2016), using computers in education is vital as it increases the learners' interests in computers. The use of computers is very important to the learners, as computers are necessary for community improvement, learners' future job opportunities, and local and national innovation. Computers also widen the range of career options for learners, since all business sectors today involve computing, for example, the arts, film, finance, healthcare, journalism, manufacturing, music and security.

Fast and growing technological developments worldwide have seen education engaging in Information and Computer Technology (ICT). Having ICTs in education is a significant transformation to the current demands of the society. In the modern world there is increased workplace demand for computer literate employees and this demand may be attained through involving ICTs in education. Success in education, modern job and career opportunities hinges on ICT knowledge and skills (Hindi et al. 2002). It is, therefore, important for learners to be exposed to ICTs in schools from a very young age.

Appropriate use of electronic information systems in the schools requires proper attainment of computer literacy skills by teachers. This move has steered the need to partake in and escalate teacher computer literacy. Possessing basic computer skills is vital for even operations in the applications desirable in education. Ber-

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nadette (2010) advances the view that different countries in the world have varied needs for computer literate people due to the standards of societies and the level of their computer skills. Taylor et al. (2011: 29) observe, "Acquiring computer skills is more important today than ever before, especially in a developing country." While Mukti (2000: 1) states, "*In order to use an instructional tool such as the computer to achieve the goals of teaching and learning, teaching must have adequate knowledge about the computer."*

In the above view, it is important to note that modern day teaching cannot remain the same when conducted against the background of changes in ICTs in the outer world. In most first world countries there are Computing At School (CAS) centers. This is a group of individuals and professionals who love working with computers and are in a center where children can walk in and manipulate computers. These centers are established by individuals who would like to give children in their community great education in computer technology. Professionals like teachers are also free to join CAS so as to be acquitted to the computer world (Computing At School 2016). Being a member of such communities would assist the teachers to ensure that ICTs are fully utilized in teaching and learning.

In education computers are used for a number of applications like data capturing, paper writing and searching information on the Internet. ICTs are seen as a way of improving and proving quality in the delivery of instruction.

Hirsch (2012) emphasized that teachers need time to appreciate and find ways to maximize technology in the classroom for the greater benefit of the learners. Possession of computer knowledge and skills in the education sector empowers curriculum planners to develop programs suitable for the needs of learners considering the present world of technological advancements (Hindi et al. 2002).

It is imperative to use ICTs in education, as it is a modern means of capturing and storing data that can also be shared. Ogundele and Etejere (2013) express the view that electronic information systems allow teachers to acquire information on learning instruction materials through the Internet. This permits researchers, academics, and specialists to interrelate and interchange thoughts in the field of education. In education, teachers use computers in classroom teaching and learning processes to increase efficiency and effectiveness in curriculum delivery and records keeping. Through ICTs educational researchers store, display, transmit, and analyze data. Electronic information system enables the teachers, researchers, school administrators, and students to acquire, process, store and disseminate vocal, pictorial, textual and numerical information by electronic based systems (Etejere and Ogundele 2008).

The use of ICT in education has developed positive changes in educational institutes and communities. The positive changes brought in by ICT in education have been realized through appropriate infrastructure and ICT facilities encompassing electricity, telephone, educational software, Internet facilities and hardware such as computers, scanners, and multimedia projectors (Satharasinghe 2007). Instructional technology is a vital part of Career and Technical Education, and includes computers and all the related technologies as well as the systems and processes for implementing technology use in the classroom (Lu and Miller 2002; Jenkins et al. 2008). In recent years, there has been an increased emphasis on the integration of technology into curriculum especially at the high school level (Peake et al. 2005). Lu and Miller (2002) describe technology used in the classroom in various forms including computers, DVD/VCR players, digital and video cameras, televisions, cooking equipment, and welding equipment. They also describe how classroom technology can help the teacher use, assess, alter, and present information in a variety of ways.

Barakat and Bataineh (2008) point out that in education the use of computers as part of ICTs in the instructional process is seen as a positive change from the use of old-fashioned teaching methods. As a result of this move, which has brought about drastic changes in the educational process, learners' use of computers has, thus, become an imperative requisite (Al-Ajlouni 2003). Asan (2013: 153) states that:

The use of computers in education opens a new area of knowledge and offers a tool that has the potential to change some of the existing educational methods. The teacher is the key to the effective exploitation of this resource in the educational system.

The use of computers is increasing in the society implying that educators also need to

prepare for the usage of computers in the classroom. In all levels of education and in all ages computers are applicable (Get Into Teaching 2016; McCannon and Crews 2000).

Ogundele and Etejere (2013) and Opie (2003) advance the view that computers in education are used in the classroom teaching learning processes through computer aided instruction (CAI), computer assisted learning (CAL), and e-learning. It is also important to note that use of computers by teachers assists in content delivery. Sofoluwe (2007) argues that computer literacy by teachers assists in enhancing computer-aided instruction, and Lawal (2012) observes that when teachers appreciate the use of computers in the schools, the work becomes easier for them. In defining computer literacy, Kvasnica and Hrmo (2010: 1) state that it is:

… The human competency to use one's own knowledge, skills and abilities from the close sphere of the hardware and software computer equipment, as well as from the wider sphere of ICT, for the collection, storage, processing, verification, evaluation, selection, distribution and presentation of information in a required form and quality to achieve their relevancy to a specified destination.

Teachers' knowledge of computers is also important as teachers need to embrace the concept of e-learning (Kvasnica and Hrmo 2010). Similarly, Oh and French (2007) as well as Park and Son (2009) advance the view that teachers should be competent in dealing with online teaching and learning environments.

Computer literacy also enables teachers to access information necessary for teaching and learning easily on the Internet. There is an important aspect of literacy termed 'information literacy', which is very important for teachers (Son 2004). Teachers should possess skills to access information online in order to ensure that content taught to learners is current and abreast with latest developments.

Importance of Computer Literacy for Teachers

It is essential for teachers to be computer literate in this ICT based era. Computer literacy in teachers boosts their confidence as educators. Once teachers have the assurance of the ICT skills they possess, their confidence in using electronic systems is boosted, and hence, professional development is guaranteed. Starkey (2010) shows that boosting ICT usage in teaching and learning increases professional development opportunities for teachers and helps shape highly confident, self-reliant and supportive teachers.

Computer literacy in teachers allows online professional collaboration between teachers and leads to positive changes to their practice. Through computer literacy teachers become aware of their own professional development needs (Kpolovie 2010). The Internet, accessed through a computer is an electronic library. Opie (2003) observed that using the Internet through the computer enables researchers and teachers to access the appropriate information needed for research, teaching and learning. The use of an electronic library in education is worthy because massive amounts of valid information are available through various sources exposed through the Internet.

It is important for teachers to be computer literate as computers make work easy and stress-free compared to manual means. Kpolovie (2007) reveals that the usage of statistical package for Statistical Product and Service Solutions (SPSS) software for advanced statistics assists teachers, administrators, and researchers by overcoming the rigor of manual analysis of primary data.

For a modern day teacher computer literacy is imperative. Barakat and Bataineh (2008) point out that using computers for instruction in the classroom empowers learners to gain knowledge by concrete rather than symbolic media, thus, computer literacy is important to teachers. Engaging in academic learning activities involving computers motivates learners to be active and readily participate in the teaching and learning process (Nicol and Anderson 2000). A teacher who involves learners in ICTs in the classroom gives them an opportunity to gain a sense of individual control and mastery over the learning environment (Becker 2000). Using computers for teaching and learning in the classroom provides learners with computer skills they need, to fit into the modern society (Nicol and Anderson 2000). Computer literacy for teachers is important for an improved instruction in the classroom.

Previous Studies on Teacher Computer Literacy and Utilization of ICTs in Learning

Studies in teacher computer literacy and utilization of ICTs in learning have been conduct-

ed in a number of countries. A study by Satharasinghe (2006) in Sri Lanka on teacher computer literacy and utilization of ICTs in learning revealed that the country needed to improve the quality of education and provide equal education for all students across the country and the use of ICTs in education was significant and seen as a way of providing equal education for all learners. However, the study concluded that there was need to formulate an ICT policy for the education system in Sri Lanka in order to realize optimum utilization of ICTs in learning. Upon realizing that rural schools in Sri Lanka did not have the appropriate facilities for ICT, it was suggested that standard materials be arranged with very accessible software tools and reproduced into compact disks and then dispersed to all needy schools.

Ogundele and Etejere in 2008 investigated the relationship between computer literacy and teacher's job effectiveness of secondary schools in Nigeria. The findings of the study revealed that computer literacy, in secondary schools in Kwara state in Nigeria, encourages appreciation and operation of computers during the teaching and learning processes. The use of ICTs in secondary schools in Kwara state in Nigeria was seen as consistently supporting teachers' job effectiveness in job performance, record keeping, school discipline, and it supported the learners' academic performance. The study also revealed that computer literate teachers performed their tasks better in the schools than non-computer literate teachers in the schools by making use of computers during their teaching. The use of computers in secondary schools in Kwara state was perceived as a way of arousing learners' interest in lesson delivery, which necessitated optimal learner academic performance.

A study conducted by Asan in 2003 in Trabzon, Turkey on teacher computer literacy and utilization of ICTs in learning revealed that many teachers were not computer users. The results of the study by Asan (2003) reflected that many teachers required a functional computer literacy base on which to build new technology knowledge and skills. This study also did an analysis of teachers' knowledge of computer technologies and revealed that teachers had low levels of technical knowledge and for some teachers, computer technology was not part of their teacher training. The results of a study by Asan in 2003 also reflected that gender, years of teaching, and school status have a significant relationship to familiarity with computer technologies in Turkey. There was a reflection of lack of hardware, knowledge and skills on using computers, lack of training and insufficient training opportunities. In Turkey, crowded classrooms were the most hindrances in proper application of ICTs in the education.

Jenkins et al. (2008) conducted a study on the relationship that exists between computer literacy and use of technology as well as the connection that exists between teachers' contact to technology and their use of technology in Family and Consumer Sciences Education classrooms in the state of Kentucky. The results of this study revealed that access to technology was not always adequate and most of the teachers indicated that they did not have adequate equipment for the number of students in their classes.

Barakat and Bataineh (2008) examined student teachers' use of computers at Yarmouk University in Jordan. The study reflected that student teachers use the computer to develop young learner's literacy skills. It was further revealed in the study by Barakat and Bataineh (2008) that though the time allocated to using computers for developing literacy skills in learners was limited, there was a high degree of use of computers in these classrooms. The findings of the study further revealed minimal diversity in the use of computers to develop learner's literacy skills, while a few student teachers used computers as a resource for playing games, drill and practice, homework, and assessing learner's literacy skills.

In a study conducted in Malaysia in the year 2000 by Mukti, factors such as teacher's background characteristics, attitudes and concerns that relate to teachers' use do computer technology were investigated. The results of the study by Mukti (2000) revealed that these factors showed a great significance in the degree of classroom computer usage. A positive attitude has been seen to correlate to successful implementation of computer usage (Mukti 2000: 2).

A study on computer literacy and utilization of ICTs in learning by Taylor et al. (2011) aimed at modeling factors influencing the success of the learning of computer literacy by means of an e-learning environment. The study revealed that the use of computers during the learning pro-

cess influenced a huge success in the learners' results of their final school year. On the other hand, Son et al. (2011) in their study examined the level of computer literacy of a group of Indonesian teachers of English as a foreign language (EFL) and investigated factors affecting their use of computers in classrooms. The results of the study reflected that self-rated competency is not equal to actual levels of computer knowledge and skills for using a variety of applications and that self-evaluation of basic computing skills are generally high but their frequency of using computer applications is very limited to a few types of applications such as word processing. The teachers seemed to be having limited knowledge and use of databases, concordances and computer-mediated communication (CMC) tools. In spite of limited access to Internet, the teachers involved in this study showed positive attitudes towards the use of computers.

Theoretical Framework

This study is underpinned by the diffusion of innovations theory (Rogers 1995). The diffusion process can be defined as "the spread of a new idea from its source of invention or creation to its ultimate users or adopters" (Rogers 1995: 13). This means that with inventions in ICTs in the outer world, teachers and learners in schools should be seen to be utilizing such invention in enhancing teaching and learning. According to Rogers and Shoemaker (1971), there are five categories into which adopters fall based upon their innovativeness, namely, laggards, late majority, early majority, early adopters, and innovators. Teachers and learners should adopt ICTs, despite the different levels and paces of adoption, to ensure that schools do not lag behind developments in the world if they are to effectively prepare learners for life after school (Women and Information Technology 2016). The diffusion of innovations theory can be linked back to teachers' computer literacy, access to and use of technology. By analyzing prior research related to technology, certain indicators are present that indicate shifts between the five categories of adoption, that is, laggards, late majority, early majority, early adopters, and innovators (Rogers and Shoemaker 1971).

Objectives of the Study

The objectives of this study were to:

(a) Establish teachers' levels of computer literacy and utilization of ICTs in teaching and learning.
(b) Suggest ways in which the teachers' levels of computer literacy and ICTs utilization in teaching and learning be enhanced.

Research Questions

The research questions of the study were:
(a) What are the teachers' levels of computer literacy and ICTs utilization in teaching and learning?
(b) How could the teachers' levels of computer literacy and ICTs utilization in teaching and learning be enhanced?

RESEARCH METHODOLOGY

A research paradigm is a way of thinking about and studying social reality that results in a particular worldview (Maree 2007). Heinning et al. (2005) refer to a research paradigm as a philosophical framework guiding a study. The study is located in a post-positivist paradigm. Post positivist researchers employ multiple perspectives when studying a phenomenon, thus there is emphasis on collecting multiple kinds of data (Johnson and Christensen 2000).

Without an appropriate approach for the research process, a study may be unreliable and invalid. This study employed a mixed methods research approach. The mixed methods was considered more appropriate as collecting both quantitative and qualitative data provided a better understanding of the research problem than making use of a single approach.

A research design is therefore a full set of procedures that guide the researcher in the process of verifying a particular hypothesis or explanations to the problem under study. Mouton (2009) defines a research design as a set of guidelines and instructions to be followed in addressing a research problem. Bless et al. (2009) also indicate that a research design allows the researcher to draw conclusions about the relationship between variables that are of importance to the research objectives. This study employed a case study research design.

Population and Sampling

Babbie (2007) describes a research population as a group of, usually, people from whom

researchers draw conclusions from. Mouton (2009) defines a research population as all-inclusive elements of various kinds or the universe that different researchers choose to study. Bless et al. (2009) also expresses that a research population is an entire set of objects or people, which a researcher wants to gather information from. The present study sought to examine teacher computer literacy and utilization of ICTs in teaching and learning. The participants involved in the study were teachers from primary schools in Zimbabwe. A convenient sample of seventy-one (71) primary school teachers drawn from one education district in Zimbabwe participated in the study.

Instrumentation

In this study, semi-structured questionnaires were used to collect data. A semi-structured questionnaire carries open-ended questions that demand responses with explanations. They aim to elicit fuller responses encompassing stories, narratives and detailed experiences from participants (Adamson et al. 2004). The use of the semi-structured questionnaire enabled the researchers to collect both quantitative and qualitative data consistent with the mixed method approach adopted for the study.

Data Analysis

Data was analyzed statistically with aid of SPSS version 22. Data was presented in frequencies and percentages. A comprehensive elucidation of the data presented is also provided.

Ethical Issues

Ethical issues were attended to as informed consent was sought from participants as they were asked to fill in consent forms after the purpose of the study was explained to them. Participants' confidentiality and anonymity was guaranteed. Participants were also informed that they were willing to withdraw from the study at any point.

RESULTS

This section presents results of the study by looking at biographical details of respondents as well as respondents' computer literacy and ICT utilization.

Table 1: Biographic details of participants (n=71)

Biographic details		*No.*	*%*
Age	22-29	17	24
	30-37	32	45
	38-45	14	20
	Above 45	8	11
Gender	Male	23	33
	Female	48	67
Teaching Experience	1-5 years	22	31
	6-10 years	26	36
	Above 10 years	23	33
Highest Professional Qualification	Certificate in Education	7	10
	Graduate Certificate in Education/Post-graduate Diploma in Education	0	0
	Diploma in Education	44	63
	Bachelor of Education	14	20
	Master of Education	4	5
	Honours Degree	2	2

The biographical details of the participants were solicited. The biographic details in Table 1 show that respondents had a fair gender distribution with the majority in the ages 30 to 45. The highest percentage of the respondents was of diploma holders followed by degree holders. The majority of the respondents were experienced and mature enough to make informed responses regarding ICT usage in their profession.

Table 2 shows that the majority, which constitutes seventy percent of the respondents indicated that they had the ability to use Microsoft Word, while sixty-six percent indicated that they were computer literate, and the same number stated that they have Internet access in their schools. Sixty percent of the respondents indicated the ability to use Microsoft PowerPoint, while fifty percent indicated that they were able to do Internet searches. Other notable factors were that sixty percent of the respondents underwent computer training during teacher training while fifty-three percent indicated that they did formal training in computers. Fifty percent of the respondents indicated that they had laptops, forty-nine percent stated that they had a functional Facebook account, and forty-three percent indicated that they had a working email account. The results of the study reveal that there are traces of ICT utilization in schools in the developing countries. It was evident from the findings of this study that schools with Internet access motivated their staff to be computer literate and that the possession of a smartphone was influenced by Internet access.

Table 2: Computer literacy (n=71)

Question	*Yes*	*%*	*No*	*%*
Computer literacy	46	66	25	33
Formal training in computers	37	53	34	47
Computer training during teacher training	42	60	29	40
Ability to use Microsoft word	50	70	21	30
Ability to use PowerPoint	42	60	29	40
Ability to do internet searches	35	50	36	50
Having a working email account	30	43	41	57
Having a functional Facebook account	34	49	37	51
Possession of laptop/smartphone	35	50	36	50
Internet access in school	46	66	25	33

Data collected indicated that a fairly large number of respondents, forty-two percent (n=29) used ICTs mainly in searching for content on the Internet. However, sixty-two percent (n=23) indicated that they did not really teach learners to search for information on Internet. The majority of the respondents also indicated that they did not fully utilize ICTs when using videotapes and audiotapes in teaching and learning. Similarly, fifty-nine percent of the educators responded by indicating that they did not use MS PowerPoint to present lessons at all and sixty-six percent did not at all communicate with their students using email while fifty-six percent did not communicate with learners through Facebook. It was evident from the findings that the majority of the respondents were not fully utilizing ICTs in teaching and learning (Table 3).

In terms of ranking as shown in Table 4, aspects of ICT utilization by mean responses, reveals that it was clear that searching for content on the internet and typing and printing of notes for learners were highly ranked whilst communicating with students using email and presenting lessons on PowerPoint were lowly ranked. It could be concluded that ICTs were not fully utilized. Some of the reasons behind failure to adequately utilize ICTSs are outlined next.

Table 4: Ranking of aspects of utilisation

Rank	*Area*	*Mean*
1	Searching for content on internet	2.90
2	Typing and printing of notes for learners	2.51
3	Teaching learners to search information on internet	2.37
4	Use of audiotapes in teaching and learning	2.30
5	Use of video tapes in teaching and learning	2.29
6	Communicating with learners through Facebook	2.09
7	Presenting lessons on PowerPoint	1.90
8	Communicating with students using email	1.79

The use of ICTs in teaching and learning is a basic requirement in the modern day school environment. Technological advancement is an elementary requirement and contributes much to the learner's development both socially and academically, as the society they live in now is technologically advanced. Educators and learners need to be in an environment where they are

Table 3: Utilisation of ICTs in teaching and learning (n=71)

Aspect of utilisation	*Very much*		*Much*		*Fairly*		*Not that much*		*Not at all*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Typing and printing of notes for learners	11	16	7	10	12	17	17	24	23	33
Presenting lessons on power point	7	10	3	4	7	10	12	17	41	59
Searching for content on internet	14	20	15	21	11	16	10	14	20	29
Teaching learners to search information on internet	12	17	5	7	10	14	13	19	10	43
Communicating with students using email	5	7	5	7	6	9	8	11	46	66
Communicating with learners through Facebook	8	11	7	10	7	10	9	13	39	56
Use of video tapes in teaching and learning	7	10	10	14	10	14	12	17	31	45
Use of audiotapes in teaching and learning	9	13	8	11	9	13	13	18	31	45

free to search for content from the Internet, type and print learnt material, use audiotapes and videotapes as well as communicate through the web (Table 5).

Table 5: Verbatim responses from the study participants

Thematic frame	*Verbatim quotations*
Unavailability of Computers	There are no computers in the school. In our rural school there is only one computer.At our school we do not have computers at all.
Inadequacy of Computers	The available computers in my school are inadequate for the large classes.Computers are very few. Computer equipment is a challenge.
Lack of Internet Connectivity	There is no internet access in the school.We haven't had internet for two months now.We have Wi-Fi but it is very weak and unreliable.
Lack of Teacher Expertise in ICTs	Most teachers lack training and skills to use the available gadgets.Teachers have no knowledge of how to integrate ICTs in their teaching.I am not computer literate.
Power Problems	There is no electricity in the school.There are constant power outages in this area.

DISCUSSION

The findings of the study reveal that there was little utilization of ICTs in schools in developing countries, while in first world countries CAS centers have been established to ensure that professionals such as teachers and children have an opportunity to manipulate computers from the community center (Computing At School 2016). The view from The Final EU Study Report for February 2013 is contrary to the findings of the study, as it reflected that the use of ICTs in teaching and learning increases professional development opportunities for educators and assists in boosting confidence and self-reliance amongst teachers. It was evident from the findings that the majority of the respondents were not fully utilizing the available ICTs in teaching and learning and this is contrary to Barakat and Bataineh (2008) who are of the opinion that the use of computers in education is a valuable part of ICT utilization in the instructional process.

The findings of the study revealed that in some countries ICT utilization was negatively affected by teachers' lack of computer knowledge and skills, and limited number of computers as well as lack of electricity in schools. This is in line with the results of a study by Asan (2003) conducted in Turkey. The results of a study by Asan (2003) reflect that ICT utilization in schools is hindered by lack of computers, knowledge and skills. Without teachers' knowledge and expertise in computers, it becomes very difficult to have ICTs integrated in teaching and learning.

This study revealed that technological advancement is a fundamental condition in the modern society and contributes much to the learners' development both socially and academically. Literature reviewed in this study revealed that the use of ICTs in teaching and learning is a basic requirement in the modern day school environment. This is supported by Hirsch (2012) who reveals that teachers need to appreciate and find ways to maximize ICTs in teaching and learning for the benefit of the learners. Osuji (2010) also reveals that in almost all the areas of human life today there is need to use the computer.

It was evident from the findings of this study that schools with Internet access motivated their staff to be computer literate and that the possession of a smartphone was influenced by Internet access. This is similar to the view by Ogundele and Etejere (2013) that electronic information systems is vital in the education system to teachers as a source of acquiring information on learning instruction materials through the Internet.

This study revealed that the majority of respondents hardly used email or Facebook to communicate with their learners, yet Women and Information Technology (2016) point out that using ICTs is important for a learner since it contributes to the improvement of the community learners' future career opportunities as well as local and national innovations. The findings of the study also revealed that teachers and learners need to be in an environment where they are free to search for content from the Internet. This is in line with Hindi et al. (2002) who observed that using the Internet through the computer enables researchers and teachers to access the appropriate information needed for research, teaching and learning.

CONCLUSION

The study concludes that there is low level of utilization of ICTs in teaching and learning by teachers. The reasons for this ranged from teachers' computer illiteracy, unavailability of computers and power problems, among others. In this regard, in a world awash with technological advancement, some schools have some way to go in utilizing ICTs in teaching and learning. This study concludes that teachers and learners in most parts of the world remained deprived of ICT use as most schools were failing to meet proper ICT requirements needed for teaching and learning. The study also concluded that limited ICT usage in most schools has failed to prepare learners for the technological world that they would encounter after school.

RECOMMENDATIONS

In light of the findings, the following recommendations are made.

a) Training Teachers in Computers and ICT

Computer training and the integration of ICTs in teaching and learning should form an integral component of the teacher education curriculum.

b) Staff Development

Staff development programs should be put in place in schools to equip teachers with knowledge and skills in ICT.

c) Availability of ICT Resources

Every school should have a reliable source of energy to power ICT gadgets for teaching and learning purposes.

d) Availability of Internet

Schools should have a reliable Internet connectivity to allow the necessary integration of ICTs in teaching and learning.

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